

**WHAT IS CLAIMED IS:**

- 1        1. An arrangement for combining narrowband and  
2        broadband transport mechanisms in a communications network,  
3        comprising:
  - 4                a narrowband component, said narrowband component  
5                including switching intelligence and narrowband switching  
6                fabric, said narrowband component adapted to terminate  
7                incoming sides and outgoing sides of communications;
  - 8                a broadband component, said broadband component  
9                including broadband switching fabric, said broadband  
10               component adapted to terminate at least outgoing sides of  
11                communications; and
- 12                wherein the arrangement is capable of terminating  
13                an incoming side and an outgoing side of a first  
14                communication at said narrowband component, and the  
15                arrangement is capable of terminating an incoming side of a  
16                second communication at said narrowband component and an  
17                outgoing side of the second communication at said broadband  
18                component.

1           2. The arrangement according to claim 1, wherein said  
2 broadband component is further adapted to terminate incoming  
3 sides of communications, and the arrangement is further  
4 capable of terminating an incoming side and an outgoing side  
5 of a third communication at said broadband component.

1           3. The arrangement according to claim 2, wherein the  
2 third communication is serviced by at least one  
3 telecommunications feature via said narrowband component.

1           4. The arrangement according to claim 1, wherein said  
2 broadband component relies on the switching intelligence of  
3 said narrowband component.

1           5. The arrangement according to claim 1, wherein said  
2 narrowband component includes a synchronous transfer mode  
3 (STM) switch, and said broadband component includes an  
4 asynchronous transfer mode (ATM) switch.

1       6. The arrangement according to claim 1, further  
2 comprising at least one circuit emulator, said at least one  
3 circuit emulator adapted to enable said broadband component  
4 to emulate a circuit with respect to said narrowband  
5 component.

1       7. The arrangement according to claim 1, wherein said  
2 broadband component is adapted to emulate a circuit  
3 connection for the outgoing side of the second communication  
4 at said broadband component.

1           8. A system for combining narrowband applications with  
2 broadband transport in a communications network, comprising:  
3                a first logical node, said first logical node  
4 including a first circuit-based switch and a first packet-  
5 based switch, said first logical node adapted to route  
6 communications between the first circuit-based switch and the  
7 first packet-based switch, the first circuit-based switch  
8 having access to call control logic;  
9                a second logical node, said second logical node  
10 connected to said first logical node, said second logical  
11 node including a second circuit-based switch and a second  
12 packet-based switch, said second logical node adapted to  
13 route communications between the second circuit-based switch  
14 and the second packet-based switch; and  
15                wherein a given communication may be propagated on  
16 a broadband transport mechanism or a narrowband transport  
17 mechanism between said first logical node and said second  
18 logical node.

1        9. The system according to claim 8, wherein a  
2 connection across the narrowband transport mechanism may be  
3 established between the first circuit-based switch and the  
4 second circuit-based switch, between the first circuit-based  
5 switch and the second packet-based switch, between the first  
6 packet-based switch and the second circuit-based switch, and  
7 between the first packet-based switch and the second packet-  
8 based switch.

1        10. The system according to claim 9, wherein the first  
2 packet-based switch and the second packet-based switch may  
3 establish connections across the narrowband transport  
4 mechanism using at least one circuit emulator each.

1        11. The system according to claim 8, wherein a  
2 connection across the broadband transport mechanism may be  
3 established between the first packet-based switch and the  
4 second packet-based switch.

1        12. The system according to claim 8, wherein said first  
2        logical node is adapted to receive an incoming side of a  
3        communication and to forward an outgoing side of the  
4        communication from the first packet-based switch over the  
5        broadband transport mechanism to the second packet-based  
6        switch.

1        13. The system according to claim 12, wherein the  
2        incoming side of the communication is terminated by the first  
3        circuit-based switch.

1        14. The system according to claim 12, wherein the  
2        incoming side of the communication is terminated by the first  
3        packet-based switch.

1        15. The system according to claim 12, wherein said  
2        first logical node is further adapted to at least one of  
3        interface with and provide access to a telecommunications  
4        service for the communication prior to forwarding the  
5        outgoing side of the communication.

1           16. The system according to claim 8, wherein said first  
2 logical node is adapted to receive an incoming side of a  
3 communication at the first packet-based switch and to forward  
4 an outgoing side of the communication from the first circuit-  
5 based switch.

1        17. A method for enabling a migration of a narrowband  
2        network to a broadband transport mechanism, comprising the  
3        steps of:

4                receiving, at a first node having call control  
5        functionality and connection control functionality, a first  
6        communication in a first format;

7                forwarding, from the first node, the first  
8        communication in the first format;

9                receiving, at the first node, a second  
10      communication in the first format;

11               routing, by the first node, the second  
12      communication to a second node, the second node having  
13      connection control functionality; and

14               forwarding, from the second node, the second  
15      communication in a second format.

1        18. The method according to claim 17, wherein the first  
2        format comprises a time division multiplexed (TDM) format,  
3        and the second format comprises an asynchronous transfer mode  
4        (ATM) format.

1           19. The method according to claim 17, wherein the first  
2 node includes a synchronous transfer mode (STM) switch, and  
3 the second node includes an asynchronous transfer mode (ATM)  
4 switch; and wherein the first node is directly connected to  
5 the second node.

1           20. The method according to claim 17, further  
2 comprising the steps of:  
3           receiving, at the second node, a third  
4 communication in the first format; and  
5           forwarding, from the second node, the third  
6 communication in the second format.

1           21. The method according to claim 17, further  
2 comprising the steps of:  
3           receiving, at the second node, a third  
4 communication in the second format; and  
5           forwarding, from the second node, the third  
6 communication in the second format.

1           22. The method according to claim 21, further  
2 comprising, after said step of receiving a third  
3 communication and before said step of forwarding the third  
4 communication, the steps of:

5           routing the third communication from the second  
6 node to the first node;

7           providing a telecommunications service for the  
8 third communication via the first node; and

9           routing the third communication from the first node  
10 back to the second node.

1           23. A method for enabling a migration of a narrowband  
2 network to a broadband transport mechanism, comprising the  
3 steps of:

4           receiving, at a first node having call control  
5 functionality and connection control functionality, a first  
6 communication in a first format;

7           forwarding, from the first node, the first  
8 communication in the first format;

9           receiving, at a second node having connection  
10 control functionality, a second communication in a second  
11 format;

12           routing, by the second node, the second  
13 communication to the first node; and

14           forwarding, from the first node, the second  
15 communication in the first format.

1           24. The method according to claim 23, wherein said step  
2 of routing, by the second node, the second communication to  
3 the first node is performed by the second node responsive to  
4 at least one instruction from the first node.

1           25. A method for enabling a gradual migration from a  
2 primarily narrowband network to a primarily broadband  
3 network, comprising the steps of:

4           receiving a communication having an identifier that  
5 corresponds to a destination terminal of the communication;  
6           analyzing the identifier that corresponds to the  
7 destination terminal of the communication;

8           determining whether the identifier is associated  
9 with a network node having broadband capability; and  
10           if so, forwarding the communication over a  
11 broadband transport mechanism.

1           26. The method according to claim 25, further  
2 comprising the step of:

3           if not, forwarding the communication over a  
4 narrowband transport mechanism.

1        27. The method according to claim 25, wherein said step  
2        of receiving a communication having an identifier that  
3        corresponds to a destination terminal of the communication  
4        comprises the step of receiving the communication on a  
5        broadband transport mechanism.

1        28. The method according to claim 25, wherein said step  
2        of receiving a communication having an identifier that  
3        corresponds to a destination terminal of the communication  
4        comprises the step of receiving the communication on a  
5        narrowband transport mechanism.

1        29. The method according to claim 25, wherein the  
2        identifier comprises a B-number; and wherein said step of  
3        analyzing the identifier that corresponds to the destination  
4        terminal of the communication comprises the step of  
5        analyzing, via a narrowband group switch, the identifier.

1       30. The method according to claim 25, wherein said step  
2       of determining whether the identifier is associated with a  
3       network node having broadband capability comprises the step  
4       of comparing the identifier to a plurality of entries in a  
5       data structure.

1       31. The method according to claim 30, wherein the data  
2       structure includes bearer type information.

1       32. The method according to claim 25, wherein said step  
2       of determining whether the identifier is associated with a  
3       network node having broadband capability comprises the step  
4       of determining a proximity between the network node and the  
5       destination terminal.

1       33. The method according to claim 25, further  
2       comprising the step of determining whether an identifier that  
3       corresponds to an origination terminal is associated with a  
4       network node that has broadband capability.

1           34. An arrangement for combining narrowband and  
2 broadband transport mechanisms in a communications network,  
3 comprising:

4               means for providing switching intelligence;  
5               means for providing narrowband switching, said  
6 means for providing narrowband switching having operative  
7 access to said means for providing switching intelligence;  
8               means for providing broadband switching, said means  
9 for providing broadband switching connected to said means for  
10 providing narrowband switching;  
11              means for forwarding an incoming narrowband  
12 communication as an outgoing narrowband communication  
13 utilizing said means for providing narrowband switching; and  
14              means for converting and forwarding an incoming  
15 narrowband communication as an outgoing broadband  
16 communication utilizing said means for providing narrowband  
17 switching and said means for providing broadband switching.

1           35. The arrangement according to claim 34, further  
2 comprising:

3               means for converting and forwarding an incoming  
4 broadband communication as an outgoing narrowband  
5 communication utilizing said means for providing broadband  
6 switching and said means for providing narrowband switching.

1           36. The arrangement according to claim 34, further  
2 comprising:

3               means for providing access to an intelligent  
4 network (IN) service; and  
5               wherein said means for providing broadband  
6 switching has operative access to said means for providing  
7 an IN service via said means for providing narrowband  
8 switching.

1           37. A method for combining narrowband applications with  
2 broadband transport in a communications network, comprising:  
3               terminating a time division multiplexed (TDM)  
4 inbound side of a first communication at a circuit switch;  
5               switching the first communication by the circuit  
6 switch;  
7               terminating a TDM outbound side of the first  
8 communication at the circuit switch;  
9               terminating a TDM inbound side of a second  
10 communication at the circuit switch;  
11               switching the second communication by the circuit  
12 switch;  
13               switching the second communication by a packet  
14 switch; and  
15               terminating an asynchronous transfer mode (ATM)  
16 outbound side of the second communication at the packet  
17 switch.

1           38. The method according to claim 37, further  
2 comprising the steps of:

3                   terminating an ATM inbound side of a third  
4 communication at the packet switch;  
5                   switching the third communication by the packet  
6 switch;  
7                   switching the third communication by the circuit  
8 switch; and  
9                   terminating a TDM outbound side of the third  
10 communication at the circuit switch.

1           39. The method according to claim 37, further  
2 comprising the steps of:

3           terminating an ATM inbound side of a third  
4 communication at the packet switch;

5           switching the third communication by the packet  
6 switch;

7           switching the third communication by the circuit  
8 switch;

9           providing a telecommunications service for the  
10 third communication via the circuit switch; and

11           at least one of the following steps:

12           terminating an ATM outbound side of the third  
13 communication at the packet switch; and

14           terminating a TDM outbound side of the third  
15 communication at the circuit switch.

1           40. The method according to claim 37, further  
2 comprising the steps of:

3           terminating an ATM inbound side of a third  
4 communication at the packet switch;

5           switching the third communication by the packet  
6 switch; and

7           terminating an ATM outbound side of the third  
8 communication at the packet switch.